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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,911	04/05/2004	Etienne Quesnel	119364	2645

25944 7590 03/29/2007
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EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/816,911

Applicant(s)

QUESNEL ET AL.

Examiner

Rodney G. McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4-5-04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 12 are indefinite because it is unclear whether the claim is a method of an apparatus. It is suggested to write these claims as apparatus claims incorporating the process limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1-3, 5-8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. (U.S. PG PUB. 2004/0055871 A1) in view of .

Regarding claim 1, Walton et al. teach a process designed to prevent particles originating from at least one contamination source from contaminating the free surface of a micro-component arranged in a vacuum chamber. (See Abstract; 0005; 0020) The process consists of sputtering a beam of second particles between the contamination source and the micro-component. (Paragraph 0022, 0023) The second particles are ionized and are expected to act on the particles through momentum, electrostatically and by gravity. (Paragraph 0025) The contaminants are repelled or deflected away from the surface. (Paragraph 0020)

Regarding claim 2, Walton et al. teach the beam of second particles is argon ions which is a plasma (i.e. an ionized gas). (Paragraph 0025)

Regarding claim 3, Walton et al. teach that the gas is argon. (Paragraph 0025)

Regarding claim 5, Walton et al. teach that the micro-component comprises a substrate where at least one thin layer is to be deposited. (Paragraph 0005) The beam of first particles are dragged by a flow of sputtered matter designed to form the thin layers. (Paragraph 0022) The beam of second particles passes through the flow of sputtered matter upstream from the micro-component. (Paragraph 0023; Fig. 2)

Regarding claim 6, Walton et al. teach that the flow of sputtered matter is formed by bombardment of the target by a sputtering plasma. (Paragraph 0022)

Regarding claim 7, Walton et al. teach that the beam of second particles passes simultaneously through the sputtering plasma and the flow of sputtered matter. (See Walton et al. paragraph 0023)

Regarding claim 8, Walton et al. teach that the deposition of the thin layer is formed by ion beam sputtering. (See Paragraph 0022)

Regarding claim 11, Walton et al. teach the storage device for performing the process of Applicant's claim 1. (See Fig. 2)

Regarding claim 12, Walton et al. teach the layer deposition device for performing the process of Applicant's claim 5. (See Fig. 2)

The differences between Walton et al. and the present claims is that the first particles having a first polarity and the second particles having a second polarity such that the second particles drag the first particles away to a collecting element (Claim 1).

Regarding the first particles having a first polarity and the second particles having a second polarity such that the second particles drag the first particles away to a collecting element (Claim 1), Walton et al. teach that the second particles are positive argon ions. (See paragraph 0023-0025) Walton et al. teach that electrostatic forces act on the particles when the Argon ion beam is utilized to move the particles. (See paragraph 0025) The electrostatic forces indicate that the "other defect causing particles" have a different polarity than the Argon ions. (See paragraph 0025; 0022) Furthermore since Applicant's process is identical (i.e. sputtering and utilizing an ion beam to remove particles) the same effect will be realized.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the features of Walton et al. because it allows for removing contaminants.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. (U.S. PG PUB. 2004/0055871 A1) in view of Nakamura et al. (U.S. Pat. 6,057,233).

The difference not yet discussed is where the voltage designed to generate the plasma is comprised between 50 Volts and 200 Volts (Claim 4).

Regarding claim 4, Nakamura et al. teach generating a plasma by utilizing a voltage of 80 V for generating a plasma for removing particle contaminants from a plume of material depositing on a substrate. (See Abstract; Column 3 lines 40-54)

The motivation for utilizing the features of Nakamura et al. is that it allows removing contaminants from the depositing film. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the features of Nakamura et al. because it allows for removing contaminants from the depositing film.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. (U.S. PG PUB. 2004/0055871 A1) in view of Periasamy (U.S. Pat. 5,472,550).

The difference not yet discussed is where the flow of sputtered matter is formed by bombardment of a target by a sputtering plasma (Claim 9) and where the deposition is formed by thermal evaporation by Joule effect (Claim 10).

Regarding claim 9, Periasamy teach utilizing sputtering while preventing contamination from the substrate surface. (See Abstract; Column 2 lines 63-68; Column 3 lines 1-2)

Regarding claim 10, Periasamy teach utilizing thermal evaporation while preventing contamination from the substrate surface. (See Abstract; Column 2 lines 63-68; Column 3 lines 1-2)

The motivation for utilizing the features of Periasamy is that it allows for preventing contamination of the substrate. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the features of Periasamy because it allows for preventing contamination of the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
March 26, 2007